SC

STREEM COMMUNICATIONS

Technical Documentation Series

Data Interface Format Guide

STREEM COMMUNICATIONS

Data Interface Format

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Streem Input Data Interface

Data interchange with Streem Cast or Streem Alert is based on the Common Alerting Protocol (CAP) 1.1 Standard. The full CAP specification is available at http://www.oasis-open.org/specs/index.php#capv1.1. The following sections give a brief overview of the CAP standard and detail the subset of mandatory and optional fields specific to interacting with Streem. The Streem-specific version of the CAP data file will be referred to as "Data File" in the following sections.

CAP 1.1

The CAP standard is an XML-based data structure that has become an approved standard by OASIS. OASIS (Organization for the Advancement of Structured Information Standards) is a non-profit, international consortium that oversees the development, convergence, and adoption of e-business standards. More information on OASIS can be found at www.oasis-open.org. CAP was created as a means to standardize data for critical communications. This standard is in use by such organizations as NOAA (National Oceanic And Atmospheric Administration) and DMIS (Disaster Management Interoperability Services) to disseminate emergency/critical information.

Input Data File Components

There are 4 main components to the data file that is to be passed to Streem. These components are Alert, Info, Resource, and Area. The Alert component is the parent component of the data file and is required. The Info component, though not required by CAP, is required for interfacing with Streem and is the main information component. The Resource component is optional and is used by Streem for message attachments. The Area component is optional and is planned for future Streem handling of geographic contact information. Following is a high-level view of the structure of the components.

```
<alert>
        <info>
                <eventCode>
                        <valueName></valueName>
                        <value></value>
                </eventCode>
        <resource>
                </resource>
                <area>
                </area>
        </info>
</alert>
```

Alert Component

The following chart details the elements that make up the Alert Component.

Element Name	Required	Notes
Identifier	Yes	Unique identifier for this message (can not contain "<" or "&") **Streem format: username_dateTime**
Sender	Yes	Globally unique identifier of the initiating user **Streem format: user's email address**
Sent	Yes	Date/Time of message creation in dateTime format (2006-01-30T16:30-06:00) Timezones follow the time and are in the format of +/-00:00
Status	Yes	Cap Standard code values: "Actual" - Actionable by all targeted recipients "Exercise"- Actionable only by designated exercise participants; exercise identifier should appear in <note> "System" - For messages that support alert network internal functions. "Test" - Technical testing only, all recipients disregard "Draft" – A preliminary template or draft, not actionable in its current form. **Streem currently will act upon the data file identically, regardless of the value present here**

Element Name	Required	Notes
msgType	Yes	CAP Standard values: “Alert” - Initial information requiring attention by targeted recipients “Update” - Updates and supercedes the earlier message(s) identified in <references> “Cancel” - Cancels the earlier message(s) identified in <references> “Ack” - Acknowledges receipt and acceptance of the message(s)) identified in <references> “Error” indicates rejection of the message(s) identified in <references>; explanation SHOULD appear in <note> **Streem currently supports only “Alert”**
Scope	Yes	CAP Standard codes: “Public” - For general dissemination to unrestricted audiences “Restricted” - For dissemination only to users with a known operational requirement (see <restriction>, below) “Private” - For dissemination only to specified addresses (see <address>, below) **Streem currently supports only “Public”**

Info Component

The following chart details the elements that make up the Info Component.

Element Name	Required	Notes
Language	No	Natural Language identifier per RFC 3066. If not present the implicit default value is en-US. Null value is also considered the default value of en-US. **Streem currently supports only the default**
Category	Yes	CAP Standard codes: “Geo” - Geophysical (inc. landslide) “Met” - Meteorological (inc. flood) “Safety” - General emergency and public safety “Security” - Law enforcement, military, homeland and local/private security “Rescue” - Rescue and recovery “Fire” - Fire suppression and rescue “Health” - Medical and public health “Env” - Pollution and other environmental “Transport” - Public and private transportation “Infra” - Utility, telecommunication, other non-transport infrastructure “CBRNE” – Chemical, Biological, Radiological, Nuclear or High-Yield Explosive threat or attack “Other” - Other events **Streem currently will act upon the data file identically, regardless of the value present here**
Event	Yes	The text denoting the type of the subject event of the alert message **Streem usage: Title of Broadcast**

Element Name	Required	Notes
Urgency	Yes	CAP Standard codes: “Immediate” - Responsive action SHOULD be taken immediately “Expected” - Responsive action SHOULD be taken soon (within next hour) “Future” - Responsive action SHOULD be taken in the near future “Past” - Responsive action is no longer required “Unknown” - Urgency not known **Streem currently will act upon the data file identically, regardless of the value present here**
Severity	Yes	CAP Standard codes: “Extreme” - Extraordinary threat to life or property “Severe” - Significant threat to life or property “Moderate” - Possible threat to life or property “Minor” - Minimal threat to life or property “Unknown” - Severity unknown **Streem currently will act upon the data file identically, regardless of the value present here**
Certainty	Yes	CAP Standard codes: “Observed” – Determined to have occurred or to be ongoing. “Likely” - Likely (p > ~50%) “Possible” - Possible but not likely (p <= ~50%) “Unlikely” - Not expected to occur (p ~ 0) “Unknown” - Certainty unknown **Streem currently will act upon the data file identically, regardless of the value present here**
eventCode	Yes (Streem)	ValueName/Value pairs used by Streem to denote distribution method and recipient addresses. See the eventCode detail below
Effective	Yes (Streem)	Date/Time value in dateTime format (2006-01-30T16:30-06:00) Timezones follow the time and are in the format of +/-00:00 **Streem usage: Scheduled date/time**
senderName	Yes (Streem)	**Streem usage: user’s full name**
Headline	Yes (Streem)	**Streem usage: subject line for non-voice messages**
Instructions	Yes (Streem)	**Streem usage: message body or a message id in the format “MessageID=xxx” where xxx is the message Id**
Parameter	Yes (Streem)	ValueName/Value pairs used by Streem to denote distribution method and recipient addresses. See the parameter detail below

eventCode Detail

The eventCode elements define the distribution method and recipient addresses for the given distribution method. This is handled in the data file by means of the eventCode tag and children tag pairs valueName and value. There must be at least one valueName/value pair and a valueName/value pair for each distribution method required for the message. The valid valueName codes are listed in the chart below. The value data is a semi-colon delimited list of recipient addresses in the form dictated by the distribution method set in the valueName element.

eventCode valueName codes	Value format
Fax	Semi-colon delimited list of fax numbers (numeric only) Example: 1234567890;8113456732
Email	Semi-colon delimited list of email addresses Example: him@my.org;her@this.com
Phone	Semi-colon delimited list of phone numbers (numeric only) Example: 1234567890;8113456732
Cell	Semi-colon delimited list of cell phone numbers (numeric only) Example: 1234567890;8113456732
SMS	Semi-colon delimited list of text messaging addresses Example: 1234567890@vtext.com
Pager	Semi-colon delimited list of pager numbers
Distribution	Distribution list id
UserName	Semi-colon delimited list of recipient usernames Example: johnDoe;JDoe
EDXLResponse	File name for EDXL Response file – use unique identifier tag and ".xml"

parameter Detail

The parameter elements define the remaining information for a Streem broadcast. The parameter valueName/value pairs are dependent upon the eventCode elements within the data file. The following table details the valid valueName/value pairs for each eventCode valueName. Note that all of these elements are optional.

eventCode valueName	Parameter valueName Code	Value format
Fax	Resolution	One of the following values: 1, 2 1 equates to normal 2 equates to high If missing, defaults to 1
Fax	CoverPage	One of the following values: null or blank (company default) "Company" (company-specified cover page) "Dept" (Department-specified cover page) "none" (no cover page) If missing, defaults to company default
All eventCodes	ConfirmationTo	The name of the person that will receive the confirmation
All eventCodes	ConfirmationEmail	The email address of the person to receive the broadcast confirmation. If missing, then no confirmation is sent
All eventCodes	Priority	Broadcast priority – May be one of the following values: 1, 5, 9 1 equates to high priority 5 equates to normal priority 9 equates to low priority If missing, the priority defaults to 5
All eventCodes	BillingCode	Alpha-numeric value for billing purposes
EDXLResponse	EDXLFileName	File name for creation of EDXL response data
All eventCodes	BatchID	Alpha-numeric value
Distribution	This can be any of the above Parameter valueName/value pairs depending on the distribution methods within the distribution list	

Resource Component

The Resource component is used for related information such as remote documentation or, in Streem's case, attachments for non-voice (fax, email) messages. If a broadcast job does not require attachments, then this component can be left out entirely. The following chart details the elements that make up the Resource Component when the broadcast requires one or more attachments.

Element Name	Required	Notes
resourceDesc	Yes	Text describing the content and type of file
Uri	Yes (Streem)	File name of attachment (attachment must be in same directory as the data file

Area Component

The area component is an optional component and is not currently used by Streem. The purpose of this component is to provide geographical information that may be utilized to describe an area affected by the message. This component will be utilized by Streem in the future for GIS-type lookups of recipient addresses.

Sample Input Data File

```
<?xml version="1.1" encoding="UTF-8" standalone="yes"?>
<alert xmlns="http://www.incident.com/cap/1.1">
        <identifier>username_2006031416500823</identifier>
        <sender>username@mycompany.com</sender>
        <sent>2006-03-14T16:50:15-08:00</sent>
        <status>Actual</status>
        <msgType>Alert</msgType>
        <scope>Public</scope>
        <info>
                <language>en-US</language>
                <category>Met</category>
                <event>Fire Evacuation</event>
                <urgency>Immediate</urgency>
                <severity>Extreme</severity>
                <certainty>Very Likely</certainty>
                <eventCode>
                        <valueName>Cell</valueName>
                        <value>1234567890;8123450978;2137592800</value>
                </eventCode>

                <eventCode>
                        <valueName>Email</valueName>
```

```
            <value>him@this.com;her@that.net;all@my.com</value>
        </eventCode>
        <effective>2006-03-14T16:50:15-08:00</effective>
        <senderName>Firstname LastName</senderName>
        <headline>Fire Evacuation - Immediate Attention required</headline>
        <instructions>There is a large fire at 2100 Main Street. Engine companies
          12, 7, and 9 are responding.  Immediate evacuation of a 4 block radius centering
          on 2100 Main Street is required.
        </instructions>
        <parameter>
            <valueName>ConfirmationEmail</valueName>
            <value>Me@mycompany.org</value>
        </parameter>
        <parameter>
            <valueName>Priority</valueName>
            <value>5</value>
        </parameter>
        <parameter>
            <valueName>BillingCode</valueName>
            <value>ABS12345</value>
        </parameter>
        <parameter>
            <valueName>EDXLFileName</valueName>
            <value> username_2006031416500823.xml</value>
        </parameter>

        <resource>
            <resourceDesc>area map</resourceDesc>
            <uri>main.pdf</uri>
        </resource>
    </info>
</alert>
```

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Streem Response Data Interface

The Streem system supplies output data using our Streem Reporting XML scheme embedded in an EDXL Distribution Element. For complete information about the EDXL Distribution Element, refer to http://docs.oasis-open.org/emergency/EDXL-DE/V1.0. The following sections present a detailed look at the pertinent parts of EDXL Distribution elements and the Streem Reporting XML Definition.

EDXL Distribution Element

Streem utilizes the main EDXLDistribution Element and the optional contentObject Container Element. The Streem XML data is contained within the contentObject Container.

The EDXLDistirbution Element

Element Name	Required	Notes
EDXLDistribution	Yes	This is the container for all of the elements related to the distribution of content messages.
distributionID	Yes	Unique Identifier of this distribution message **Streem Usage: JobNumber_dateTime**
senderID	Yes	Globally unique identifier of the initiating user **Streem format: original broadcast initiator's email address**
dateTimeSent	Yes	Date/Time of message creation in dateTime format (2006-01-30T16:30-06:00). Timezones follow the time and are in the format of +/-00:00
distributionStatus	Yes	Action-ability of the message. Must be one of: Actual – Real world information for action Exercise – Simulated information for exercise participants System – Message regarding or supporting network functions Test – Discard-able message for technical testing **Streem Usage: Actual**
distributionType	Yes	The type of message. Must be one of: Report – New information regarding an incident or activity Update – Updated information superseding a previous message Cancel – A revocation of a previous message Request – A request for resources, information, or action Response – A response to a previous request Dispatch – A commitment of resources or assistance Ack – Acknowledgement of receipt for earlier message

Element Name	Required	Notes
		Error – Rejection of an earlier message (technical issue) **Streem Usage: Report**
distributionReference	Yes (Streem)	A reference to a previous distribution message **Streem Usage: Unique identifier (this comes from the identifier tag in the XML input file that was used to initiate the broadcast)**

contentObject

This section details the EDXL optional contentObject Element and it's sub-elements. This element is mandatory for Streem's purposes.

The contentObject Element

Element Name	Required	Notes
contentObject	Yes	This is the container for all of the elements related to the message content.
xmlContent	Yes (Streem)	The container for XML data
embeddedXMLContent	Yes (Streem)	Open container for XML content

Streem Reporting XML Data

This section details Streem Reporting XML schema that is used to report the status details for a submitted broadcast.

The Streem schema contains three main sections. The first section is the broadcast job summary data. This section provides the summary data for the broadcast as a whole and occurs only once in the message. The second section is the Recipient section, which provides details for each recipient. The Recipient Section is repeated for each recipient in the broadcast. The third section (a sub section of Recipient) is used for Acknowledgements. This section lists the question, the digit chosen and it's corresponding text. Since there can be multiple acknowledgements, there may be multiple Acknowledgements.

Streem Summary Section

Element Name	Required	Notes
Summary	Yes	This is the container for all of the elements related to the summary data.
JobNumber	Yes	This is the internal job number assigned to the broadcast upon initiation.
Title	Yes	The title of the original broadcast
Subject	No	The subject used in email or fax recipients
NumberRecipients	Yes	The total number of recipients for the broadcast
NumberPages	No	The total number of Fax pages
Successful	Yes	The number of successfully delivered messages in the broadcast
StatusId	Yes	The final status ID of the broadcast*
StatusText	Yes	The final status text associated with the Status ID*

Element Name	Required	Notes
Acknowledgements	Yes	Boolean value indicating whether or not acknowledgements were required
ConfCall	Yes	Boolean value indicating whether or not a conference call was included in the broadcast

Streem Recipient Section

Element Name	Required	Notes
Recipient	Yes	This is the container for all of the elements related to each of the individual recipients.
DestinationId	Yes	This is the destination ID that uniquely identifies the destination in the broadcast
Name	Yes	The recipient's name
Address	Yes	The destination address for the recipient. May be a phone/fax number, email address, or text message address.
Type	Yes	Indicates what type of destination this recipient has (cell, phone, fax, email, text message, pager)
ResultId	Yes	Result Code*
Result	Yes	The success or failure of delivery to the recipient*
Acknowledgement	Conditional	If acknowledgements were required in the original broadcast, this is the container for the acknowledgement(s)
ConfCallResponseDigit	Conditional	If a Conference Call was included in the original broadcast, this is the digit selected
ConfCallResponseText	Conditional	If a Conference Call was included in the original broadcast, this is the text associated with the digit selected
Attempts	Yes	A number indicating how many attempts were used to contact the recipient
Attempted	Yes	DateTime of the last attempt

Streem Acknowledgement Section

Element Name	Required	Notes
Acknowledgement	Yes	This is the container for all of the elements related to acknowledgements
Question	Yes	This is the original question posed
Digit	Yes	This is the selected digit in response to the question
Text	Yes	This is the text of the answer associated with the digit selected

Sample File

Following is a sample response file:

<?xml version="1.1" encoding="UTF-8" standalone="yes"?>

```
<EDXLDistribution xmlns="urn:oasis:names:tc:emergency:EDXL:DE:1.0">
   <distributionID>18301_20060101010000</distributionID>
   <senderID>intiator@streem.net</senderID>
   <dateTimeSent>2006-01-01T01:00:00-05:00</dateTimeSent>
   <distributionStatus>Actual</distributionStatus>
   <distributionType>Report</distributionType>
   <contentObject>
      <xmlContent>
         <embeddedXMLContent>
            <Summary xmlns = "urn:Streem:names:Report:1.0">
               <JobNumber>18301</JobNumber>
               <Title>Demo Broadcast</Title>
               <Subject>Demonstration</Subject>
               <Submitted>2006-05-31T022:10:34-05:00</Submitted>
               <NumberRecipients>2</NumberRecipients>
               <NumberPages>5</NumberPages>
               <Successful>2</Successful>
               <StatusId>100</StatusId>
               <StatusText>Complete</StatusText>
               <Acknowledgements>True</Acknowledgements>
               <ConfCall>True</ConfCall>
               <Recipient>
                  <DestinationId>1</DestinationId>
                  <Name>John Doe</Name>
                  <Address>5551230987</Address>
                  <Type>Cell</Type>
                  <ResultId>100</ResultId>
                  <Result>Success</Result>
                  <Acknowledgement>
                       <Question>Are you available for a meeting on
                  Monday?</Question>
                       <Digit>1</Digit>
                       <Text>Yes</Text>
                  </Acknowledgement>
                  <ConfCallResponseDigit>1</ConfCallResponseDigit>
                  <ConfCallResponseText>Will Attend</ConfCallResponseText>
                  <Attempts>2</Attempts>
                  <Attempted>2006-05-31T022:11:17-05:00</Attempted>
               </Recipient>
               <Recipient>
                  <DestinationId>2</DestinationId>
                  <Name>Jane Doe</Name>
                  <Address>Jane@Doe.org</Address>
                  <Type>Email</Type>
                  <Result>Success</Result>
                  <Attempts>1</Attempts>
                  <Attempted>2006-05-31T022:10:40-05:00</Attempted>
               </Recipient>
            </Summary>
         </embeddedXMLContent>
      </xmlContent>
   </contentObject>
</EDXLDistribution
```

Streem Report XSD

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema targetNamespace="http://tempuri.org/XMLSchema.xsd" elementFormDefault="qualified"
xmlns="http://tempuri.org/XMLSchema.xsd" xmlns:mstns="http://tempuri.org/XMLSchema.xsd"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
<xs:element name="Summary">
        <xs:complexType>
                <xs:sequence>
                        <xs:element name="JobNumber" type="xs:integer" />
                        <xs:element name="Title" type="xs:string" />
                        <xs:element name="Subject" type="xs:string" />
                        <xs:element name="Submitted" type="xs:dateTime" />
                        <xs:element name="NumberRecipients" type="xs:long" />
                        <xs:element name="NumberPages" type="xs:long" />
                        <xs:element name="Successful" type="xs:long" />
                        <xs:element name="StatusID" type="xs:integer" />
                        <xs:element name="StatusText" type="xs:string" />
                        <xs:element name="Acknowledgements" type="xs:boolean" />
                        <xs:element name="ConfCall" type="xs:boolean" />
                        <xs:element name="Recipent" maxOccurs="unbounded">
                                <xs:complexType>
                                        <xs:sequence>
                                                <xs:element name="DestinationId" type="xs:integer" />
                                                <xs:element name="Name" type="xs:string" />
                                                <xs:element name="Address" type="xs:string" />
                                                <xs:element name="Type" type="xs:string" />
                                                <xs:element name="ResultId" type="xs:integer" />
                                                <xs:element name="Result" type="xs:string" />
                                                <xs:element name="Acknowledgement" maxOccurs="unbounded">
                                                        <xs:complexType>
                                                                <xs:sequence>
                                                                <xs:element name="Question" type="xs:string" />
                                                                <xs:element name="Digit" type="xs:string" />
                                                                <xs:element name="Text" type="xs:string" />
                                                                </xs:sequence>
                                                        </xs:complexType>
                                                </xs:element>
                                                <xs:element name="ConfCallResponseDigit" type="xs:string" />
                                                <xs:element name="ConfCallResponseText" type="xs:string" />
                                                <xs:element name="Attempts" type="xs:integer" />
                                                <xs:element name="Attempted" type="xs:dateTime" />
                                        </xs:sequence>
                                </xs:complexType>
                        </xs:element>
                </xs:sequence>
        </xs:complexType>
</xs:element>
</xs:schema>
```

*Possible value for StatusId, StatusText, ResultId, and Result

StatusId or ResultId	StatusText or Result
10	Adding
12	Submitted
20	Preparing
25	Prepared
40	Ready
60	Holding
65	Routed
70	Sending Primary
75	Sending Secondary
90	Telex
95	Purged (Marked for Deletion)
100	Completed
110	Error
120	Canceled
130	Failed
140	Aborted
200	Completed-VM